

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5**United States of America****PROPOSALS FOR THE WORK OF THE CONFERENCE****PROPOSAL FOR AGENDA ITEM 1.4**

“to consider issues concerning allocations and regulatory aspects related to Resolutions 126 (WRC-97), 128 (WRC-97), 129 (WRC-97), 133 (WRC-97), 134 (WRC-97) and 726 (WRC-97)”

A proposal to indicate that other bands are available for high-density applications in the fixed service and the need for further studies to facilitate sharing between high-density systems in the fixed service and other services in the shared bands.

Background information

With the future introduction of high-density fixed systems (HDFS) in the fixed service into the 31.8-32.3 GHz and 37-38 GHz bands, there has been increasing concern about the possibility of interference to space research service (SRS) earth stations supporting deep space and other categories of space missions from the aggregate emissions of HDFS systems in nearby urban/suburban population centres. A preliminary study conducted in preparation for WRC-2000 showed that for a single urban population centre, a maximum coordination distance on the order of 250 km may be required to provide a level of protection that is in conformity with Recommendations ITU-R SA.609 and SA.1157. Because of a lack of information on the characteristics of anomalous propagation to a single earth station from stations in the fixed service that are randomly distributed over a geographic area as large as an urban population centre, it was not possible for ITU-R to prepare a recommendation on the coordination distance required to ensure protection of a receiving SRS (deep space) earth station and other more conventional earth stations from the emissions of an ensemble of geographically dispersed HDFS stations. ITU-R WP 3M is expected to undertake studies in the next study cycle that are necessary to characterize the anomalous propagation paths.

There are about thirteen SRS (deep space) earth stations operated or planned to be operated worldwide. These earth stations employ state-of-the-art, low-noise amplifiers and receiving antennas with a diameter up to 70 metres and an aperture gain in excess of 80 dB. The United States currently operates an SRS (deep space) earth station near Goldstone in California as part of a global, deep-space network (DSN) that includes comparable earth stations located near Madrid, Spain and Canberra, Australia. The Goldstone station is currently operational and is supporting Mars missions. The Madrid and Canberra stations will become operational in 2002. The other planned 32 GHz earth stations will be operated by the European Space Agency (ESA), Japan, the Russian Federation, Belgium, Italy, Germany and the Ukraine.

The operation of these deep-space earth stations and other, more conventional SRS earth stations must be protected in conformity with Recommendations ITU-R SA.609 and SA.1157 from interference from the emissions of HDFS systems.

Proposals

MOD USA/221/1

S5.547 The bands 31.8-33.4 GHz, 37-40 GHz, 42.0-43.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service (see Resolution **726 (Rev.WRC-972000)**).

Reasons: Many administrations throughout the world have permitted the deployment of high-density fixed systems in various parts of the frequency range 37-40 GHz. The band 42.0-43.5 GHz is very suitable for HDFS applications given the radio astronomy use of the band 42.5-43.5 GHz.

ADD USA/221/2

S5.HDFS In the bands 37.0-40.0 GHz and 42.0-43.5 GHz, administrations should take the availability of these bands for high-density applications in the fixed service into account when considering the use of other allocated services (see Resolution **726 (Rev.WRC-2000)**).

Reasons: To encourage and facilitate fixed service use of the subject bands.

MOD USA/221/3

RESOLUTION 726 (~~WRC-97~~Rev.WRC-2000)**Frequency bands above 30 GHz available for high-density applications in the fixed service**The World Radiocommunication Conference (~~Geneva, 1997~~Istanbul, 2000),*considering*

- a) that there is a dramatically increasing demand for high-density applications in the fixed service resulting from the deployment of new mobile networks and from the rapid worldwide deregulation in the provision of local broadband services, including multimedia;
- b) that the frequency range from 30 GHz to about 50 GHz is the range preferred to satisfy initial requirements, as indicated in *considering a)*, while the bands above about 50 GHz are preferred for similar applications but which take technical advantage of high atmospheric absorption;
- c) that the lower part of the spectrum above 30 GHz has advantages for the fixed service in areas where longer path lengths are necessary;
- d) that the 38 GHz band is already heavily used by many administrations for high-density applications in the fixed service;
- e) that the needs of other services to which the relevant frequency bands are already allocated must be taken into account;
- f) that the band 31.8-32.3 GHz is currently being used and is planned for continued use by the space research service (deep-space) (space-to-Earth) to support deep-space missions;
- g) that there are about thirteen deep-space earth stations worldwide, including those located near Goldstone (United States), Madrid (Spain), Canberra (Australia), ...;
- h) that the band 37-37.5 GHz is being planned for use by the space research service (space-to-Earth) to provide moon-to-Earth and planetary communication links;
- i) that the band 37-38 GHz is being planned for use by the space research service to provide space based very long baseline interferometry;
- h) that the deployment of high-density applications in the fixed service in some bands potentially presents sharing difficulties with other primary services allocated to the same band, e.g. the fixed-satellite service;
- k) that operations in the space services, such as in the fixed-satellite service, in those bands used by high-density applications in the fixed service may lead to sharing difficulties;
- l) that there is a need for global harmonization of new and existing allocations of radio frequency bands to facilitate coordination between administrations and encourage development of competitive products, through economies of scale, and the worldwide introduction of new telecommunication services, including the provision of reliable global information infrastructure access at an affordable cost,

MOD USA/221/4

resolves

that administrations should take into account that the bands 31.8-33.4 GHz*, 37-40 GHz, 42.0-43.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service, when considering allocations or other regulatory provisions in relation to these bands,

MOD USA/221/5

requests ITU-R

1 to undertake studies leading to the identification of system characteristics of high-density systems in the fixed service in ~~the~~certain bands listed in the *resolves*;

2 to ~~undertake~~develop, as a matter of urgency, ~~studies of~~ITU Recommendations addressing technical and operational criteria and of methods to facilitate sharing between high-density systems in the fixed service and other services in the bands listed in the *resolves*,

urges administrations

to participate actively in the aforementioned studies by submitting contributions to ITU-R.

Reasons: Consequential.
